OBJECTIVES: Improved peri- and postoperative clinical outcomes can result in economic savings for hospitals and payers. While the relative effectiveness of topical hemostatic agents in the termination of bleeding during cardiac operations has been demonstrated, the economic benefit has not been evaluated. An economic analysis quantified the reduction in costs associated with efficient control of intraoperative bleeding. **METHODS:** Based on a cost-consequence framework, an economic model computed incremental annual outcomes and cost savings from use of a Hemostatic Matrix (FLOSEAL) versus other topical hemostatic agents. The model captured cost implications of acquisition, operating room time, complications, blood transfusions and surgical revisions due to bleeding associated with cardiac surgery procedures. Clinical outcomes data were from a prospective controlled study evaluating whether the use of a Hemostatic Matrix correlates to a decrease in postoperative bleeding-related events and complications relative to a control group using other hemostatic agents in a cohort of mixed-cardiothoracic aortic procedures (Nasso et al., 2009). Base-case costs, expressed in 2012 USD, were obtained through US cost database analyses and literature. Surgery and care related costs were regionally adjusted by economically influenced wage indices. Cost savings were determined based on a hypothetical annual number of cases. **RESULTS:** Effective hemostasis with a Hemostatic Matrix, when compared with a control group, results in cost savings through reduced OR time, reduced need for surgical revision, fewer blood transfusions and fewer post-operative complications. For a facility that conducts 600 cardiac surgeries annually, the net annualized cost savings is $5.2 million with the reduction in complications contributing the largest portion of the savings. **CONCLUSIONS:** The present economic model is reliable in evaluating hospital cost fluctuations associated with the use of hemostatic agents in cardiac surgery. These analyses strongly indicate significant savings if the Hemostatic Matrix is routinely employed in a cohort of mixed cardiothoracic aortic surgical procedures.

PCV69

COST- CONSEQUENCE ANALYSIS OF THERMOCOOL® SMARTTOUCH™ CATHETER FOR TRANSCATHETER ABLATION OF ATRIAL FIBRILLATION IN TERNI'S HOSPITAL

Perrone F[1], Costantini M[2], Carreras G[2]
[1]*Johnson & Johnson Medical, Pomezia (RM), Italy,* [2]*Santa Maria University Hospital, Terni, Italy*

OBJECTIVES: Transcatheter radiofrequency ablation (RFA) is one of the primary treatments for symptomatic drug-refractory atrial fibrillation (AF) and it is considered the first-line therapy for other arrhythmias. One of the major complications of procedure is cardiac perforation and tamponade, which can occur in cardiac chambers. Contact force technology is an important predictor of RFA efficacy and safety, a cost-consequence analysis between standard ablation catheter and Thermocool®SmartTouch™ catheter for RFA of AF has been developed in order to evaluate the introduction of the contact force in clinical practice of Terni's hospital. **METHODS:** An excel model was developed to simulate a cost-consequence analysis based on literature review and economic/organizative data collection. The means, standard deviation and 95% confidence intervals for the analysis were estimated using Bayesian methods (10,000 simulations) and assuming a reduction in terms of procedure time, complications and recurrence with the use of Thermocool®SmartTouch™ catheter. The analysis estimated the cost per procedure and per patient from hospital perspective in 1 year time horizon. **RESULTS:** The average total cost (including consumables, room, personnel and complications costs) was estimated at 9,201€ (95%IC 7,629-11,251€) for Thermocool® SmartTouch™ procedure and 9,460€ (95%IC 7,885-11,577€) for standard procedure. The consequences were estimated as procedure cost per patient, assuming the re-treatment reduction with Thermocool® SmartTouch™. The procedure cost per patient was estimated at 11,501€ (95%IC 9,234-14,602€) with Thermocool® SmartTouch™ and at 13,515€ (95%IC 10,883-17,324€) with standard. Moreover, both procedure and fluoroscopy time have been calculated respectively: 199 and 40 minutes for Thermocool®SmartTouch™ catheter vs 284 and 57 minutes for standard catheter. **CONCLUSIONS:** Thermocool® SmartTouch™ technology appears cost-savings and the consequences management results to be favorable. The results were consistent according to the developed probabilistic sensitivity analysis, but they could be different in real clinical practice, therefore it is necessary to collect data after Thermocool® SmartTouch™ introduction for validating the results simulated.

PCV70

COST-EFFECTIVENESS OF UNIVERSAL VERSUS ASSAY-DRIVEN ANTIPLATELET THERAPY IN ACUTE CORONARY SYNDROME PATIENTS

Coleman CI[1], Limone BL[2]
[1]*University of Connecticut, Storrs, CT, USA,* [2]*Hartford Hospital, Hartford, CT, USA*

OBJECTIVES: To determine the cost-effectiveness of using a platelet reactivity assay (PRA) to aid in the selection between dual antiplatelet treatment strategies for acute coronary syndrome (ACS) patients. **METHODS:** A hybrid decision tree/Markov model was used to calculate 5-year costs (2011 US$), quality-adjusted life-years (QALYs) and incremental cost-effectiveness ratios (ICERs) of 1-year of universal clopidogrel, ticagrelor or prasugrel (given to all patients) or PRA-driven ticagrelor or prasugrel (given to patients with high platelet reactivity defined as >230 on the VerifyNow P2Y12 assay, others got generic clopidogrel). We assumed a cohort of 65-year-old ACS patients and 32% and 13% incidences of high platelet reactivity ~24-48 hours post-revascularization and at 1-month. The analysis was conducted from a US payer perspective and used a 1-year cycle length. Data depicting the efficacy and safety of dual antiplatelet treatment were taken from randomized trials. **RESULTS:** The PRA-driven ticagrelor and prasugrel strategies were cost-effective compared to universal clopidogrel (ICERs=$40,100 and $49,143/QALY); however, universal ticagrelor and prasugrel strategies were not (ICERs=$61,651 and $96,261/QALY). Monte Carlo simulation suggested PRA-driven ticagrelor, PRA-driven prasugrel, universal ticagrelor and universal prasugrel would have ICERs<$50,000/QALY (be cost-effective) in 52%, 40%, 23%, and 2% of 10,000 iterations versus universal clopidogrel. Universal ticagrelor or prasugrel were also not found to be cost-effective strategies compared to the PRA-driven use of these same agents (ICERs=$68,182 and $116,875/QALY, respectively). Monte Carlo simulation suggested universal selection of ticagrelor and prasugrel would have ICERs<$50,000/QALY in only 26% and 4% of 10,000 iterations compared to their PRA-driven use. The model's conclusions were most sensitive to differences in antiplatelet agent costs and drug-specific relative risks of death. **CONCLUSIONS:** Even in the age of generic clopidogrel, PRA-driven selection of antiplatelet therapy appears to be a cost-effective strategy with the potential to decrease overall ACS associated health care costs.

PCV71

COST-EFFECTIVENESS OF TICAGRELOR IN PATIENTS WITH ACUTE CORONARY SYNDROME

Kim K[1], Calabrese M[1], Lin FJ[1], Ojo O[2], Cavallari LH[1], Touchette DR[1]
[1]*University of Illinois at Chicago, Chicago, IL, USA,* [2]*Department of Defense, Houston, TX, USA*

OBJECTIVES: Ticagrelor has been shown to reduce acute coronary syndrome (ACS)-related complications, but with a higher incidence of bleeding and greater acquisition cost than generic clopidogrel. This study was designed to assess the cost-effectiveness of ticagrelor use compared with clopidogrel in ACS patients from the US health system perspective. **METHODS:** A decision model was developed and the probabilities of complications including myocardial infarction (MI), ischemic stroke (IS), vascular death, and major bleeding events were defined based on the Platelet Inhibition and Patient Outcomes (PLATO) trial and sub studies. Cost inputs were identified from a systematic literature review and from Healthcare Cost and Utilization Project (HCUP) databases. Life expectancy for PLATO population was estimated using DEALE method. All costs were adjusted to 2012 US dollars. Utility estimates for complications were identified from peer reviewed studies, and quality-adjusted life years (QALYs) were projected to measure effectiveness. Lifetime costs and cost-effectiveness were calculated. One-way sensitivity analyses were performed on all variables. **RESULTS:** In the base case analysis, ticagrelor treatment ($58,922.91 and 10.2579 QALYs) provided 0.1243 more QALYs but cost $23,566.60 more than clopidogrel ($35,366.30 and 10.1336 QALYs). The incremental cost-effectiveness ratio (ICER) for the ticagrelor treatment was $189,468.79/QALY. Results were sensitive to the cost (50% to 200% range) of ticagrelor ($57,167.95 to $454,066.84 per QALY), the cost of clopidogrel ($228,166.51 to $112,069.80 per QALY), and the hazard ratio (95% confidence interval range) of vascular death ($135,710.24 to $358,837.65 per QALY). The ICER was less than $100,000/QALY only if the daily acquisition cost of ticagrelor was lower than $4.88 (i.e., about 66% of the daily cost in the base case). **CONCLUSIONS:** At its current price, ticagrelor was not a cost-effective treatment strategy in patients with ACS compared to generic clopidogrel, using either $50,000 or $100,000/QALY as the ICER threshold.

PCV74

THE CANARD PROJECT (PROJET CANARD) COST-EFFECTIVENESS ANALYSIS OF REAL-WORLD OUTCOMES IN A DIABETIC POPULATION: THE IMPACT OF BASELINE CHARACTERISTICS IN FRANCE

Sutherland CS[1], Gillet M[2], Brennan A[2], Duran A[1], Ansolabehere X[3]
[1]*IMS Health, London, UK,* [2]*University of Sheffield, Sheffield, UK,* [3]*IMS Health, La Défense Cedex, France*

OBJECTIVES: Type-2 diabetes in France has increased in prevalence over the past decade and there is a need to examine cardiovascular outcomes based on real-world evidence (RWE). The CANARD model was developed to evaluate the cost-effectiveness (CE) of treatments using data from a RWE French population in the IMS LifeLink™ Diabetes Cohort database. **METHODS:** A Markov micro-simulation model was developed in Microsoft Excel 2007® using the United Kingdom Prospective Diabetes Study (UKPDS) risk equations to predict cardiovascular outcomes (MI, stroke, death). Four treatment pathways taken from the IMS LifeLink™ Diabetes Cohort database were evaluated, which included step-wise treatment switches based on the patient's HbA1c. Treatments within the pathway included diet and exercise, metformin (MF), oral anti-diabetics (OADs) of sulfonylurea (SU) or dipeptidyl peptidase IV (DDP-IV) in addition to MF, a lipid lowering agent (atorvastatin) in addition to MF and an OAD, and insulin. CE outcomes in 13 subgroups were explored and uncertainty in the model was evaluated with a probabilistic sensitivity analysis (PSA) and expected value of perfect information (EVPI). The model was validated by comparing the predicted results to the database results at 18 months. **RESULTS:** The results showed that the treatment pathway including SU with atorvastatin was the most cost-effective in the general population at €2,640/QALY. The results from the PSA showed that the likelihood of this treatment pathway being cost-effective was 0.61 at willingness-to-pay (WTP) of €20,000/QALY, and 0.56 at a WTP of €50,000/QALY. EVPI at a WTP of €20,000/QALY and €50,000/QALY were €476 per patient and €1,427 per patient respectively. The subgroup results demonstrated that depending on the WTP of the French National Health Service, several treatments pathways may be CE. **CONCLUSIONS:** Overall, SU with atorvastatin was the most cost-effective treatment for a French type II diabetic population, however, uncertainty was evident and therefore, future research would be of value.

PCV75

COST-EFFECTIVENESS OF CATHETER-BASED RENAL DENERVATION FOR RESISTANT HYPERTENSION – A CANADIAN PERSPECTIVE

Sadri H[1], Pietzsch JB[2], Geisler BP[2], Padwal R[3], Vallée M[4], Feldman RD[5]
[1]*Medtronic of Canada, Brampton, ON, Canada,* [2]*Wing Tech Inc., Menlo Park, CA, USA,*